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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/585,189	10/30/2006	Brian William Holmes	128605	1166
25944 7590 04/13/2010 OLIFF & BERRIDGE, PLC P.O. BOX 320850 ALEXANDRIA, VA 22320-4850				
EXAMINER				
CALLAWAY, JADE R				
ART UNIT		PAPER NUMBER		
2872				
NOTIFICATION DATE		DELIVERY MODE		
04/13/2010		ELECTRONIC		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

OfficeAction25944@oliff.com  
jarnstrong@oliff.com

### Office Action Summary

**Application No.**

10/585,189

**Applicant(s)**

HOLMES, BRIAN WILLIAM

**Examiner**

JADE R. CALLAWAY

**Art Unit**

2872

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 02 March 2010.  
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-23 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 1-23 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.  
10) ☒ The drawing(s) filed on 03 July 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☒ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☐ Information Disclosure Statement(s) (PTO/SG-08)  
Paper No(s)/Mail Date \_\_\_\_\_

- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_  
5) ☐ Notice of Informal Patent Application  
6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 3/2/2010 has been entered.

***Oath/Declaration***

2. The Declaration under 37 CFR 1.132 filed 3/2/10 is insufficient to overcome the rejection of claims 1-23 based upon 35 U.S.C. 103 as set forth in the last Office action because:

The Declaration does not provide sufficient evidentiary support to show that the dispersion bands or rings of the Antes reference do not represent discrete image planes. It is argued that the dispersion bands or rings represent angular viewing zones and as such cannot meet the limitations of claim 1 which require: "a first holographic image element in an image plane spaced from the surface of the microstructure, the device exhibiting at least one further image in a plane spaced from said image plane of the first holographic element." However, the discrete image planes of Antes represent thick viewing planes in which discretely colored holographic images are reconstructed and viewable by a viewer. There is a spatial difference in the vertical direction between

the various planes of Antes which creates layered imagery—contrary to the arguments set forth in the Declaration.

3. In view of the foregoing, when all of the evidence is considered, the totality of the rebuttal evidence of nonobviousness fails to outweigh the evidence of obviousness.

***Response to Arguments***

4. Applicant's arguments filed 3/2/10 have been fully considered but they are not persuasive. Applicants argue that the prior art cited does not show layered imagery, rather it shows the viewing hemisphere into which each element can theoretically replay. Applicants also argue that since the image features of the prior art are based from an image plane of the first holographic element, the movement is not generated by parallax motion between objects in the planes, but instead by progressive changes in grating value in each respective structure element.

The Examiner respectfully disagrees. As depicted in figures 2-3 of Antes each structural element ( $S_n$ ,  $S_{n+1}$ , etc.) has corresponding angular measurements ( $\Psi_n$ ,  $\Psi_{n+1}$ , and  $\phi_n$ ,  $\phi_{n+1}$  etc.). Elements  $S_n$ ,  $S_{n+1}$  are replayed at different heights that are separated in space. As figure 4 depicts, each element has an angular extent over which it can be viewed. The angular extent regions each form a thick plane (i.e. each horizontal slice shown in figure 4) that is separated in space. There are at least two angular bands shown in figure 4 of Antes. The first thick plane ranges from  $10^\circ$ - $19^\circ$ , the second thick plane ranges from  $19^\circ$ - $35^\circ$ . Discretely colored images are reconstructed in each of the thick planes when the viewing angle matches the angle at which the image is reconstructed. In the viewing space, the reconstructed holographic images of the first

thick plane appear to be layered over the holographic images that are reconstructed in the second thick plane. When the device is tilted, or a user moves their eyes in relation to the device, the colored patterns of the thick bands appear to move in a predetermined direction along the different tracks. A first holographic image element exhibits an apparent rate of movement relative to at least one other image based on the progressive reconstruction of the holographic images [col. 3, lines 42-47 of Antes]. The movement generated is due to parallax motion between objects in the planes because the reconstructed images appear to move relative to one another in the longitude and latitude directions.

#### ***Priority***

5. Acknowledgment is made of applicant's claim for foreign priority based on an application filed in The United Kingdom on 1/13/05. It is noted, however, that applicant has not filed a certified copy of the 0400681.3 application as required by 35 U.S.C. 119(b).

#### ***Claim Objections***

6. Claim 1 is objected to because of the following informalities: claim 1 recites the limitation "the first holographic element" in line 6 of the claim. There is insufficient antecedent basis for this limitation in the claim. It appears that the limitation should instead read "the first holographic image element." For purposes of examination it will be treated as such. Appropriate correction is required. Claims 2-23 are dependent on claim 1 and inherit at least the same deficiencies as claim 1.

***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 1-8 and 14-23, as best understood, are rejected under 35 U.S.C. 103(a) as being unpatentable over Antes (4,568,141).

Consider claims 1 and 18, Antes discloses (e.g. figures 1-7) a security device comprising a surface relief microstructure (4, diffraction structure) which, in response to incident radiation (via, 5 or 6, light sources), replays a hologram viewable within a viewing zone, the hologram comprising at least a first holographic image element (10, color pattern) in an image plane spaced from the surface of the microstructure (e.g. figures 3-4), the device exhibiting at least one further image (second color pattern 10) in a plane spaced from the image plane of the first holographic element (e.g. figures 3-4, individual elements S), wherein the spacing between the first holographic element image plane and the plane of the at least one further image is such that, on tilting the device, the first holographic image element exhibits apparent rate of movement relative to the at least one further image [col. 3, lines 4-68, col. 4, lines 1-68, col. 6, lines 62-68, col. 7, lines 1-57]. However, Antes does not specifically disclose that a maximum viewing angle of 45 degrees or the rate of movement of the first holographic image relative to the further image is at least 6mm per radian of tilt, and the product of the rate of movement and an included angle of the viewing zone defines a distance at least 18%

of a dimension of the device in the parallax direction. Note that the Court has held that where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation; **see In re Aller, 220 F.2d 454, 456, 105 USPQ 233, 235**. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to have the maximum viewing angle be 45 degrees so that images are not replayed at undesirable viewing angles. Additionally, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to select the above parameters so that the two images can be viewed distinctly so that a security article can be easily verified by an observer.

Consider claims 2 and 4, the modified Antes reference discloses (e.g. figure 1) a device wherein the at least one further image is non-holographic and substantially spatially invariant relative to the device (the other indicia on the security article is spatially invariant relative to the device) [col. 3, lines 4-22].

Consider claim 3, the modified Antes reference discloses (e.g. figure 1) a device wherein movement of the first holographic image causes the first holographic image to overlap the at least one further image (the other indicia on the security article could be overlapped by the holograms produced by the diffraction structure) [col. 3, lines 4-22].

Consider claim 5, the modified Antes reference discloses (e.g. figures 1-7) a device wherein the hologram defines at least one second holographic image elements (S1-Sn, individual structural elements) [col. 4, lines 1-68].

Consider claim 6, the modified Antes reference discloses (e.g. figure 1) a device wherein the plane of the at least one further image (the non-holographic indicia on the

security article) is substantially coincident with the plane of the surface relief microstructure (4, diffraction structure) [col. 3, lines 4-22].

Consider claim 7, the modified Antes reference discloses (e.g. figure 3) a device wherein at least one first holographic image element and second holographic image element are formed in planes respectively in front of and behind the plane of the surface relief microstructure (4, diffraction structure) [col. 4, lines 1-68].

Consider claim 8, the modified Antes reference discloses (e.g. figures 3-4) a device wherein the surface relief microstructure (4, diffraction structure) replays at least one of the first and the second holographic element into a set of discrete, angularly spaced subsidiary viewing zones (11, surfaces) [col. 4, line 1 to col. 7 line 2].

Consider claims 14-17, the modified Antes reference discloses (e.g. figure 5) a device wherein the first and at least one further images define a symbol comprising a shape having a visual meaning (e.g. an arrow) and are relatively movable in relation to each other to form a recognizable symbol (e.g. an arrow) [col. 7, lines 2-25].

Consider claim 19, the modified Antes reference discloses an included angle of the viewing zone that is no greater than 1 radian [col. 5, lines 31-33]. However, the modified Antes reference does not disclose that the size of the device in the parallax direction is less than 5 times the interplane distance. Note that the Court has held that where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation; see **In re Aller**, **220 F.2d 454, 456, 105 USPQ 233, 235**. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to select the size of the



device to be less than 5 times an interplane distance so that the article can be made to fit within a particular size parameter while still producing distinct image in the security article.

Consider claims 20-23, the modified Antes reference discloses an article (e.g. a banknote or a check) carrying a security device, wherein the article comprises paper [col. 3, lines 4-22].

9. Claims 9-12, as best understood, are rejected under 35 U.S.C. 103(a) as being unpatentable over Antes (4,568,141) in view of Drinkwater (6,765,704).

Consider claims 9-10, the modified Antes reference does not specifically disclose that at least one of the first holographic image element and the second holographic image element is not visible in spaces between the subsidiary viewing zones. Antes and Drinkwater are related as holographic devices. Drinkwater teaches (e.g. figure 3) a device wherein each element is not visible in spaces between the subsidiary viewing zones (17-19, viewable images) and the viewing zones are substantially equally spaced apart [col. 11, lines 16-30]. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the device of Antes, as taught by Drinkwater, so that the holographic images are not blurred over one another and very distinct images can be viewed by an observer.

Consider claim 11, the modified Antes reference does not specifically disclose that the viewing zones and the spaces between the viewing zones have substantially the same angular extent. Note that the Court has held that where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the

optimum or workable ranges by routine experimentation; see **In re Aller, 220 F.2d 454, 456, 105 USPQ 233, 235**. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to have the angular extent be the same for the viewing zones and the spaces between the viewing zones so that a regular pattern of holographic images verses non holographic images can be established to further enhance a security device in an article for verification purposes.

Consider claim 12, the modified Antes reference does not disclose that the first holographic image element and the second holographic image element have a dimension of at least 3mm in the parallax direction. Antes and Drinkwater are related as holographic devices. Drinkwater teaches a device wherein first or second holographic image elements have a dimension of at least 3mm in the parallax direction [col. 8, lines 45-64]. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the device of Antes, as taught by Drinkwater, in order to ease the authentication of a device based on the visual image features.

10. Claim 13, as best understood, is rejected under 35 U.S.C. 103(a) as being unpatentable over Antes (4,586,141) in view of Kodama (2004/0121241).

Consider claim 13, the modified Antes reference does not disclose that at least one of the holographic image elements exhibits a color variation as it moves. Antes and Kodama are related as holographic devices. Kodama teaches (e.g. figures 4a-5b, 9) at least one holographic image element that exhibits a color variation as it moves [0071-0072]. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the device of Antes, as taught by Kodama, in order to

achieve an enhanced security feature based on the determination of whether or not a device has the same aesthetic properties and color variations.

***Conclusion***

11. All claims are drawn to the same invention previously claimed and could have been finally rejected on the grounds and art of record in the next Office action if they had been entered in the earlier application. Accordingly, **THIS ACTION IS MADE FINAL** even though it is a first action in this case. See MPEP § 706.07(b). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no, however, event will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JADE R. CALLAWAY whose telephone number is (571)272-8199. The examiner can normally be reached on Monday to Friday 6:00 am - 3:30 pm est.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephone B. Allen can be reached on 571-272-2434. The fax phone

number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JRC  
/JADE R. CALLAWAY/  
Examiner, Art Unit 2872

/Stephone B. Allen/  
Supervisory Patent Examiner  
Art Unit 2872